2.7 Pavement

2.7.1 *General*

The Design-Builder shall perform all Work necessary to construct the pavement required to complete the Project. The terms "pavement" or "pavement section" shall be defined as the entire pavement structural section, at a minimum, Hot Mix Asphalt (HMA), Crushed Surfacing Base Course (CSBC), and subbase materials.

Elements of Work shall include, at a minimum, the following:

- Design, construct, and maintain temporary pavement suitable for temporary use by traffic. Temporary pavement shall be designed in accordance with WSDOT pavement policy.
- Design and construct the final permanent pavement for pavement widths in accordance with the Applicable Culvert Bundle Amendment.

2.7.2 *Mandatory Standards*

The following is a list of Mandatory Standards that shall be followed for all design and construction related to this Section as referenced in TR Section 2.2, *Mandatory Standards*.

1. Special Provisions (Appendix 4)
2. Standard Specifications M 41-10 (Appendix 4)
3. WSDOT *Materials Manual* M 46-01 (Appendix 4)
4. WSDOT *Pavement Policy* (Appendix 4)
5. WSDOT *Pavement Surface Condition Field Rating Manual for Asphalt Pavements* (Appendix 4)
6. WSDOT *Construction Manual* M 41-01 (Appendix 4)
7. WSDOT *Design Manual* M 22-01 (Appendix 4)
8. WSDOT *Standard Plans* M 21-01 (Appendix 4)
9. *Qualified Products List (https://www.wsdot.wa.gov/Business/MaterialsLab/QPL.htm)*
10. WSDOT *Plans Preparation Manual* M 22-31 (Appendix 4)

2.7.3 *Design and Construction Requirements*

2.7.3.1 General Design Requirements

WSDOT has prepared the *Pavement Design Report* and is provided in the Reliance Documents. The pavement sections are described further in this Section.

2.7.3.1.1 *Pavement Sections*

The longitudinal joints in the HMA wearing course shall coincide with a lane line or an edge line.

Where it is necessary to remove existing pavement to construct other items; including, at a minimum, concrete barriers, foundations, walls, drainage facilities, and electrical facilities; all replacement pavements shall consist of the same type and thickness, including CSBC, as existing. Vertical full depth saw cuts are required at the edge of the excavation.

Compaction requirements for all HMA shoulders shall be the same as traveled lanes in accordance with Section 5-04.3(10) of the Standard Specifications.

The compacted depths of new pavement for travel lanes and shoulders shall be as follows:

SR 3 Lanes and Shoulders:

[Note: To be updated with RFP issuance]

SR 104 Lanes and Shoulders:

[Note: To be updated with RFP issuance]

SR 303 Lanes and Shoulders

[Note: To be updated with RFP issuance]

SR 307 Lanes and Shoulders

[Note: To be updated with RFP issuance]

SR 308 Lanes and Shoulders

[Note: To be updated with RFP issuance]

2.7.3.1.1.1 Local Agency Pavement

The compacted depths of new Local Agency pavement shall meet Local Agency design requirements. If the Local Agency does not have design requirements, the minimum pavement thickness shall be as shown below. The new pavement type shall match the existing adjacent pavement that is to remain:

- HMA traveled lanes, truck parking, and driveways for truck traffic: [Note: To be updated with RFP during Phase 1 Design Services]
- Shoulders: [Note: To be updated with RFP during Phase 1 Design Services]
- HMA driveways and parking for passenger vehicles: [Note: To be updated with RFP during Phase 1 Design Services]

- Driveways in combination with concrete sidewalks shall be constructed in accordance with the appropriate Standard Plans. [Note: To be updated with RFP during Phase 1 Design Services]

2.7.3.1.1.2 Miscellaneous Pavement

Unless specified elsewhere, the Design-Builder shall design the pavement thickness for pavement outside the traveled lanes and shoulders. The minimum thickness shall be in accordance with the WSDOT *Pavement Policy*.

2.7.3.1.2 *Incorporation of Existing Hot Mix Asphalt into Final Pavement Design*

The Design-Builder shall not use existing HMA unless approved by the WSDOT Engineer prior to use. When approved by the WSDOT Engineer, existing HMA pavement may be incorporated into the final pavement section for new widening and profile adjustment, provided the following conditions are met:

- The final total HMA thickness is equal to or greater than the required HMA thickness for that location shown in this Section.
- The existing HMA is free of defects including at a minimum cracking, delamination between layers, disintegration, and stripping.
- The top 0.15 feet of HMA pavement in the existing traveled lanes shall be removed by planning and replaced with new HMA.
- The top 0.30 feet of HMA pavement in the existing shoulders shall be removed by planning and replaced with new HMA.

The Design-Builder shall verify the existing HMA thickness by coring the existing HMA to be incorporated into the final pavement at 250-foot intervals. The Design-Builder shall submit the core thickness and condition information to the WSDOT Engineer for Review and Comment as a supplement to the *Pavement Design Report*. The pavement cores shall be available for examination by the WSDOT Engineer.

2.7.3.2 Hot Mix Asphalt Pavement Rehabilitation

This Section is intentionally omitted.

2.7.3.2.1 *Crack Sealing*

This Section is intentionally omitted.

2.7.3.2.2 *Hot Mix Asphalt Pavement Repair*

This Section is intentionally omitted.

2.7.3.2.3 *Prelevel*

This Section is intentionally omitted.

2.7.3.2.4 *Hot Mix Asphalt Overlay*

This Section is intentionally omitted.

2.7.3.2.5 *Bridge Overlay Replacement*

This Section is intentionally omitted.

2.7.3.2.6 *Planing Bituminous Pavement and Hot Mix Asphalt Overlay*

Planing bituminous pavement and HMA overlay shall be constructed in the following locations:

Transverse joints between new and existing pavement for a minimum of 5 feet to prevent full depth vertical joints.

When pavement widening is called for in conjunction with planing bituminous pavement and HMA overlay, construction of the wearing course for both the planing bituminous pavement and HMA overlay and the wearing course for the widening shall be placed over all traveled lanes and shoulders as the final stage of the paving operation. The longitudinal joints in the final overlay shall be located at the lane line, edge line of the traveled way, or in the shoulder.

The existing bituminous pavement shall be planed to a depth of 0.15 feet minimum, such that the entire thickness of the existing top lift is removed. The planed area shall then receive an HMA overlay with a compacted pavement depth equal to the depth removed by planing. Unless stated otherwise elsewhere in this Section, the planed area shall extend a minimum of 0.5 feet beyond the edge line into the shoulder. If shoulder rumble strips are present, the planing shall be extended further into the shoulder to completely remove the rumble strips. The planed area shall be overlaid with HMA Class ½ inch, PG 58H-22. In no case shall the compacted pavement depth of the overlay be less than 0.15 feet. A notched wedge joint shall be constructed along all longitudinal joints in the wearing surface of new HMA where the edge is not confined in accordance with Section 5-04.3(12)A2 of the Standard Specifications.

2.7.3.3 Cement Concrete Pavement Rehabilitation

This Section is intentionally omitted.

2.7.3.3.1 *Replace Cement Concrete Panel*

This Section is intentionally omitted.

2.7.3.3.2 *Partial Depth Spall Repair*

This Section is intentionally omitted.

2.7.3.3.3 *Dowel Bar Retrofit*

This Section is intentionally omitted.

2.7.3.3.4 *Cement Concrete Pavement Grinding*

This Section is intentionally omitted.

2.7.3.4 Construction Requirements

Widening of existing HMA pavement shall be constructed by removing the existing shoulder pavement by saw cutting a sufficient distance into the full depth pavement in the traveled lane to provide a clean vertical face. The saw cut shall be

a minimum of 6 inches inside the existing traveled lane and be parallel to centerline. The Design-Builder shall excavate the shoulder a sufficient depth to construct the new pavement section and re-compact subgrade.

Planed butt joints equal in depth to the final lift of HMA shall be used at transverse joints where new HMA matches into existing HMA. The maximum taper rate of the planing of a transverse butt joint shall be 0.2 percent. The Design-Builder shall include details and location of butt joints in the RFC Paving Plans.

All acceptance testing for HMA aggregate, mixture, in-place density, cyclic density, longitudinal joint density, and coring as required will be performed by the party indicated in TR Section 2.25, *Control of Materials*.

Low cyclic density areas will be evaluated by WSDOT in accordance with Section 5-04.3(10)B of the Standard Specifications. The credit for the price adjustment shall be made under the item "Cyclic Density Price Adjustment".

The Design-Builder shall develop the volumetric HMA mix design in accordance with TR Section 2.25, *Control of Materials*; 2.0 million or 4.0 million Design Builder shall select Equivalent Single Axle Loads shall be used in determining the volumetric mix design.

2.7.3.5 Cement Concrete Pavement Smoothness

This Section is intentionally omitted.

2.7.3.5.1 *Price Adjustment for Cement Concrete Pavement Smoothness*

This Section is intentionally omitted.

2.7.3.6 Hot Mix Asphalt Smoothness

This Section is intentionally omitted.

2.7.3.7 Existing Conditions

This Section is intentionally omitted.

2.7.3.7.1 *Price Adjustment for Hot Mix Asphalt Pavement Smoothness*

This Section is intentionally omitted.

2.7.3.8 Temporary Traffic Detours

The Design-Builder shall be responsible for the design of all temporary pavements and for the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic during construction, if necessary. In the event that the existing shoulders or roadways are found to be inadequate for the proposed temporary traffic volumes and duration, the Design-Builder shall be responsible for upgrading the pavement to an acceptable level. Prior to placing traffic on existing shoulders, the Design-Builder shall remove the existing rumble strips. Temporary pavements shall be designed in accordance with the most recent

version of the WSDOT *Pavement Policy*. Temporary pavement designs and associated calculations shall be submitted to the WSDOT Engineer for Review and Comment prior to incorporation. The expected duration for traffic on temporary pavement shall be included as part of the submittal.

2.7.3.9 Repair of Damaged Pavement

The Design-Builder shall repair any pavement damaged during construction. The damaged pavement shall be replaced with new pavement to pre-construction condition or better. Damaged Local Agency pavement and sidewalks shall be replaced in accordance with the Local Agency's pavement design standards.

2.7.3.10 Pervious Pavement

Pervious pavement will not be allowed in traveled lanes and shoulders. The Design-Builder may propose pervious pavement in other locations. Pervious pavement shall be in accordance with the WSDOT *Pavement Policy.*

2.7.4 *Submittals*

2.7.4.1 Hot Mix Asphalt Mix Design

The Design-Builder shall submit a copy of the completed HMA mix design to the WSDOT Engineer in accordance with TR Section 2.25, *Control of Material*.

2.7.4.2 City and County Streets and Sidewalks

If the Work impacts city or county streets, the Design-Builder shall prepare and submit pavement designs for all city and county streets and sidewalks. These shall be submitted to the WSDOT Engineer for Review and Comment.

2.7.4.3 Pavement Rehabilitation Plans

This Section is intentionally omitted.

2.7.4.4 Pavement Design Supplement

The Design-Builder shall prepare and submit a supplement to the *Pavement Design Report* to include information based on additional pavement cores used for the incorporation of existing HMA into the Final Pavement Design or for use of roadway shoulders as temporary traffic detours.

2.7.4.5 Miscellaneous Submittals

This Section is intentionally omitted.

End of Section